

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES  
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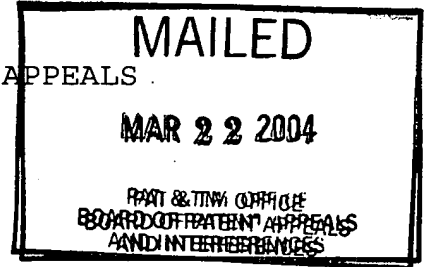
Ex parte YIFAN GONG  
\_\_\_\_\_

Appeal No. 2002-1676  
Application No. 09/589,252  
\_\_\_\_\_

ON BRIEF  
\_\_\_\_\_

Before RUGGIERO, LEVY, and BLANKENSHIP, Administrative Patent Judges.

RUGGIERO, Administrative Patent Judge.



DECISION ON APPEAL

This is a decision on the appeal from the final rejection of claim 9, which is the only claim remaining in the present application. An amendment filed May 3, 2001 after final rejection was approved for entry by the Examiner.

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The disclosed invention relates to speech recognizers in which environmental factors are removed from the speech signal during a model training procedure. Training data under different environments is obtained and used in an iterative procedure to develop optimal parameters. From these optimal parameters a new model is developed that takes into account environmental changes.

Appealed claim 9 is reproduced as follows:

9. A speech recognizer comprising:  
a speech signal source representation;  
a set of transformations;

said signal source representation and said set of transformations being jointly determined to reduce the recognition error rate by performing the step of determining a new set of signal source representation and determining new transformations jointly with the new signal source representation.

The Examiner relies on the following prior art:

Juang et al. (Juang)	5,812,972	Sep. 22, 1998
		(filed Dec. 30, 1994)

Claim 9, the sole claim on appeal, stands finally rejected under 35 U.S.C. § 102(e) as being anticipated by Juang.

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Rather than reiterate the arguments of Appellant and the Examiner, reference is made to the Briefs<sup>1</sup> and Answer for the respective details.

#### OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the Examiner and the evidence of anticipation relied upon by the Examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, Appellant's arguments set forth in the Briefs along with the Examiner's rationale in support of the rejection and arguments in rebuttal set forth in the Examiner's Answer.

It is our view, after consideration of the record before us, that the Juang reference fully meets the invention as set forth in claim 9. Accordingly, we affirm.

We note that anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. RCA Corp. v. Applied Digital Data Systems,

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<sup>1</sup> The Appeal Brief was filed July 5, 2001 (Paper No. 10). In response to the Examiner's Answer dated September 7, 2001 (Paper No. 11), a Reply Brief was filed October 2, 2001 (Paper No. 12), which was acknowledged and entered by the Examiner as indicated in the communication dated October 17, 2001 (Paper No. 13).

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Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir.); cert. dismissed, 468 U.S. 1228 (1984); W.L. Gore and Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

At page 3 of the Answer, the Examiner indicates how the various limitations in appealed claim 9 are read on the disclosure of Juang. In particular, the Examiner points to the discussion of the system illustrated in the block diagram of Figure 2 of Juang along with the accompanying description beginning at column 5, line 18.

In our view, the Examiner's analysis is sufficiently reasonable that we find that the Examiner has at least satisfied the burden of presenting a prima facie case of anticipation. The burden is, therefore, upon Appellant to come forward with evidence and/or arguments which persuasively rebut the Examiner's prima facie case. Only those arguments actually made by Appellant have been considered in this decision. Arguments which Appellant could have made but chose not to make in the Brief have not been considered [see 37 CFR § 1.192(a)].

In response to the Examiner's anticipation rejection, Appellant has offered several arguments in support of the contention that Juang fails to teach or suggest numerous features

of appealed claim 9. Initially, Appellant contends (Brief, page 3) that, in contrast to the recitations in appealed claim 9, the system described in Juang operates to transform input speech and does not transform a speech model or a speech signal source representation.

After careful review of the Juang reference in light of the arguments of record, however, we are in agreement with the Examiner's position as stated in the Answer. Our interpretation of the disclosure of Juang coincides with that of the Examiner, i.e., the conversion of the input speech signal  $O(t)$  to a series of feature vectors by feature analyzer 210 results in a "speech signal source representation" as claimed. Similarly, we agree with the Examiner that the modification of the feature vector representation by the subtraction of an equalization vector results in a set of transformations jointly determined with the signal source representation to reduce error recognition rate by determining a new signal source representation and a new transformation.

In making the above determination, we have given the ordinary and accepted meaning to the terminology "signal source representation" since Appellant has provided no special definition of such terminology in the specification. The ordinary meaning of "representation" is "to serve as a specimen, example, or instance

of." Webster's Ninth New Collegiate Dictionary 1000 (1983). We fail to see why a feature vector conversion of an source input signal such as in Juang would not be considered a "signal source representation" given the ordinary meaning of these words.

We also find to be unpersuasive Appellant's related argument (Reply Brief, pages 1 and 2) that the Examiner has misinterpreted the present claimed invention which, in contrast to Juang in Appellant's view, involves the transformation of speech models. In making this assertion, Appellant is apparently contending that the claim language "signal source representation" should be interpreted as meaning "speech model." As with our previous discussion with respect to the language "signal source representation," however, and further assuming, arguendo, that support exists for interpreting "signal source representation" as meaning "model," we find no special definition attributed to the term "model" in Appellant's specification. Accordingly, given the ordinary meaning of "model" as "a representation in mathematical terms of a process, device, or concept,"<sup>2</sup> we fail to see why the feature vector

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<sup>2</sup> Dictionary of Computers, Information Processing and Telecommunications, Second Edition, Jerry M. Rosenberg, 390, (John Wiley & Sons, 1987).

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representation of the input signal in Juang would not be considered a "model" of the input signal.

Lastly, we note that Appellant's arguments do not dispute the Examiner's position that the transformation operations described in Juang correspond to those claimed but, rather, only that such transformations are performed on an input speech signal, not a signal source representation or speech model. For all of the reasons discussed previously, we find such arguments to be without merit.

In view of the above discussion, since the Examiner's prima facie case of anticipation has not been overcome by any convincing arguments from Appellant, the Examiner's 35 U.S.C. § 102(e) rejection of the sole appealed claim 9, is sustained. Therefore, the decision of the Examiner rejecting claim 9 is affirmed.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

Joseph E. Ruggiero

JOSEPH F. RUGGIERO  
Administrative Patent Judge

STUART S. LEVY

STUART S. LEVY  
Administrative Patent Judge

BOARD OF PATENT  
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Howard B. Blankenship

HOWARD B. BLANKENSHIP  
Administrative Patent Judge

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